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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/606,336	MAUFER ET AL.	
	Examiner	Art Unit	
	Chandrahas Patel	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) *34,40-42,45 and 46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33,35-39,43 and 44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Examiner is grateful to applicant for amending claims 12-14, 16, 17 to place them in proper dependent form therefore examiner withdraws objection to claims 12-14, 16, 17.

Examiner withdraws 35 U.S.C. 101 rejection to claims 18-20, 30 since the amended claims fall under statutory subject matter.

Examiner withdraws 35 U.S.C. 112 rejection to claim 9 since amended claim distinctly claims the subject matter which applicant regards as the invention.

Applicant's arguments have been fully considered but they are not persuasive. The MAC address in cited reference is used as an index into look-up table when packet traverses next hop.

Applicant's amendment necessitated finality of this rejection.

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3, 6, 10, 11, 14, 15, 17-24, 26-33, 35-39, 43, 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Ambe et al. (US-PGPUB 2002/0009083).

Regarding claim 1, Ambe et al. teaches a method for routing a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having an Internet Protocol destination address and a media access control destination address in a data structure **[Page 13, Table 1 has a packet with IP destination address, MAC destination address fields]**, the method comprising: determining whether a media access control destination

address for the packet matches an interface of the packet **[Page 11, Paragraph 211]**; determining whether the packet contains a routable protocol responsive to the media access control destination address matching the interface **[Page 11, Paragraph 211]**; if the packet contains the routable protocol, checking for layer-level validity of the packet **[Page 11, Paragraph 212, IP checksum is checked which is layer-level validity]**; marking the data structure associated with the packet to indicate the layer-level validity was checked **[Page 11, Paragraph 212]**; checking for Internet Protocol options being supported and valid **[Page 11, paragraph 215]**; and marking the data structure associated with the packet to indicate the Internet Protocol options were checked for support and validity **[Page 11, Paragraph 218]**; and if the layer-level is valid and the Internet Protocol options are supported and valid, accessing the Internet Protocol destination address from the packet **[Page 11, Paragraph 219]**; looking for the Internet Protocol destination address in the routing table **[Page 11, Paragraph 219]**; obtaining an address resolution table index stored in association with the Internet Protocol destination address in the routing table responsive to the Internet Protocol destination address being found in the routing table **[Page 11, Paragraph 219, next Hop Mac address is the address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph 211, Default Router Table is searched first at IP level using MAC address ad table index]**; and storing in the data structure associated with the packet the address resolution table index obtained **[Page 11, 219, next Hop address is stored with the packet]**.

Regarding claim 2, Ambe et al. teaches the interface is an incoming interface **[Page 11, 211]**.

Regarding claim 3, Ambe et al. teaches the interface is an outgoing interface **[Page 11, 209]**.

Regarding claim 6, Ambe et al. teaches determining whether routing is supported within a network-processing unit **[Page 11, Paragraph 219, the default router is a network processing unit]**.

Regarding claims 10 and 14, Ambe et al. teaches the look up is done by finding an exact match in the routing table of the IP destination address **[Page 11, Paragraph 206]**.

Regarding claim 11, Ambe et al. teaches a method of routing a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having an Internet Protocol source address, an Internet Protocol destination address and a media access control destination address in a data structure **[Page 13, Table has a packet with IP source address, IP destination address, MAC destination address]** the method comprising: determining whether the media access control destination address for the packet matches an interface of the packet **[Page 11, Paragraph 211]**; determining whether the packet is a multicast packet **[Page 11, 217]** and whether multicast routing is invoked responsive to the media access control destination address not matching the interface **[Page 7, 145]** ; if the packet is a packet for multicasting and multicasting is invoked, accessing the Internet Protocol source address from the packet **[Page 12, paragraph 229]**; and checking a routing table for the Internet Protocol source address **[Page 12, paragraph 229]**; if the routing table contains the Internet Protocol source address, checking for layer-level validity of the packet **[Page 12, 230]**; marking a data structure associated with the packet to indicate the layer-level validity was checked **[Page 12, 230]**;

checking for Internet Protocol options being supported and valid **[Page 11, Paragraph 215]**; and marking the data structure associated with the packet to indicate the Internet Protocol options were checked for support and validity **[Page 11, Paragraph 218]**; and if the layer-level is valid and the Internet Protocol options are supported and valid, table; accessing the Internet Protocol destination address from the packet **[Page 11, Paragraph 219]**; looking for the Internet Protocol destination address in the routing table **[Page 11, Paragraph 219]**; obtaining an address resolution table index stored in association with the Internet Protocol destination address in the routing table responsive to the Internet Protocol destination address being found in the routing table **[Page 11, 219, next Hop Mac address is the address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph 211, Default Router Table is searched first at IP level using MAC address ad table index]**; and storing in the data structure associated with the packet the address resolution table index obtained **[Page 11, 219, next Hop address is stored with the packet]**.

Regarding claim 15, Ambe et al. teaches a method of bridging a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having a media access control destination address in a data structure **[Page 13, Table 1, MAC destination address]**, said method comprising: determining whether the media access control destination address for the packet matches an interface of the packet **[Page 11, Paragraph 211]**; determining whether the packet is a multicast packet **[Page 11, Paragraph 217]** and whether multicast routing is invoked responsive to the media access control destination address not

matching the interface **[Page 7, Paragraph 145]**; if the packet is not a packet for multicasting or multicasting is not invoked, looking for the media access control destination address in an address resolution table **[Page 8, Paragraph 148]**; obtaining an address resolution table index stored in association with the media access control destination address in the address resolution table responsive to the media access control destination address being found in the address resolution table **[Page 8, Paragraph 150, search key is address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph 211, Default Router Table is searched first at IP level using MAC address ad table index]**; and storing in the data structure associated with the packet the address resolution table index obtained **[Page 8, Paragraph 150]**.

Regarding claim 17, Ambe et al. teaches checking whether the bridging is supported within a network-processing unit **[Page 20, Paragraph 347]**.

Regarding claim 18, Ambe et al. teaches a computer-readable storage medium containing a program which, when executed by a processor, causes execution of a method for routing **[Page 3, Paragraph 61]** a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having an Internet Protocol destination address and a media access control destination address in a data structure **[Page 13, Table 1 has a packet with IP destination address, MAC destination address fields]**, said method comprising; determining whether a media access control destination address for the packet matches an interface of the packet **[Page 11, Paragraph 211]**; determining whether the packet contains a routable protocol responsive to the media access control destination address matching

the interface **[Page 11, Paragraph 211]**; if the packet contains the routable protocol, checking for layer-level validity of the packet **[Page 11, Paragraph 212, IP checksum is checked which is layer-level validity]**; marking the data structure associated with the packet to indicate the layer-level validity was checked **[Page 11, Paragraph 212]**; checking for Internet Protocol options being supported and valid **[Page 11, paragraph 215]**; and marking the data structure associated with the packet to indicate the Internet Protocol options were checked for support and validity **[Page 11, Paragraph 218]**; and if the layer-level is valid and the Internet Protocol options are supported and valid, accessing the Internet Protocol destination address from the packet **[Page 11, Paragraph 219]**; looking for the Internet Protocol destination address in the routing table **[Page 11, Paragraph 219]**; obtaining an address resolution table index stored in association with the Internet Protocol destination address in the routing table responsive to the Internet Protocol destination address being found in the routing table **[Page 11, 219, next Hop Mac address is the address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph 211, Default Router Table is searched first at IP level using MAC address ad table index]**; and storing in the data structure associated with the packet the address resolution table index obtained **[Page 11, 219, next Hop address is stored with the packet]**.

Regarding claim 19, Ambe et al. teaches a computer-readable storage medium containing a program which, when executed by a processor, causes execution of a method for routing **[Page 3, Paragraph 61]** a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having an Internet Protocol source address, an

Internet Protocol destination address and a media access control destination address in a data structure **[Page 13, Table has a packet with IP source address, IP destination address, MAC destination address]** said method comprising: determining whether the media access control destination address for the packet matches an interface of the packet **[Page 11, Paragraph 211]**; determining whether the packet is a multicast packet **[Page 11, 217]** and whether multicast routing is invoked responsive to the media access control destination address not matching the interface **[Page 7, 145]** ; if the packet is a packet for multicasting and multicasting is invoked, accessing the Internet Protocol source address from the packet **[Page 12, paragraph 229]**; and checking a routing table for the Internet Protocol source address **[Page 12, paragraph 229]**; if the routing table contains the Internet Protocol source address, checking for layer-level validity of the packet **[Page 12, 230]**; marking a data structure associated with the packet to indicate the layer-level validity was checked **[Page 12, 230]**; checking for Internet Protocol options being supported and valid **[Page 11, Paragraph 215]**; and marking the data structure associated with the packet to indicate the Internet Protocol options were checked for support and validity **[Page 11, Paragraph 218]**; and if the layer-level is valid and the Internet Protocol options are supported and valid, table; accessing the Internet Protocol destination address from the packet **[Page 11, Paragraph 219]**; looking for the Internet Protocol destination address in the routing table **[Page 11, Paragraph 219]**; obtaining an address resolution table index stored in association with the Internet Protocol destination address in the routing table responsive to the Internet Protocol destination address being found in the routing table **[Page 11, 219, next Hop Mac address is the address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph**

211, Default Router Table is searched first at IP level using MAC address ad table index]; and storing in the data structure associated with the packet the address resolution table index obtained **[Page 11, 219, next Hop address is stored with the packet]**.

Regarding claim 20, Ambe et al. teaches a computer-readable storage medium containing a program which, when executed by a processor, causes execution of a method for routing **[Page 3, Paragraph 61]** a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having a media access control destination address in a data structure **[Page 13, Table 1, MAC destination address]**, said method comprising: determining whether the media access control destination address for the packet matches an interface of the packet **[Page 11, Paragraph 211]**; determining whether the packet is a multicast packet **[Page 11, Paragraph 217]** and whether multicast routing is invoked responsive to the media access control destination address not matching the interface **[Page 7, Paragraph 145]**; if the packet is not a packet for multicasting or multicasting is not invoked, looking for the media access control destination address in an address resolution table **[Page 8, Paragraph 148]**; obtaining an address resolution table index stored in association with the media access control destination address in the address resolution table responsive to the media access control destination address being found in the address resolution table **[Page 8, Paragraph 150, search key is address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph 211, Default Router Table is searched first at IP level using MAC address ad table index]**;

and storing in the data structure associated with the packet the address resolution table index obtained **[Page 8, Paragraph 150]**.

Regarding claim 21, Ambe et al. teaches an apparatus for routing **[Page 3, Paragraph 61]** a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having an Internet Protocol destination address and a media access control destination address in a data structure **[Page 13, Table 1 has a packet with IP destination address, MAC destination address fields]**, said apparatus comprising: means for determining whether a media access control destination address for the packet matches an interface of the packet **[Page 11, Paragraph 211]**; means for determining whether the packet contains a routable protocol responsive to the media access control destination address matching the interface **[Page 11, Paragraph 211]**; responsive to the packet contains the routable protocol, means for checking for layer-level validity of the packet **[Page 11, Paragraph 212, IP checksum is checked which is layer-level validity]**; means for marking the data structure associated with the packet to indicate the layer-level validity was checked **[Page 11, Paragraph 212]**; means for checking for Internet Protocol options being supported and valid **[Page 11, paragraph 215]**; and means for marking the data structure associated with the packet to indicate the Internet Protocol options were checked for support and validity **[Page 11, Paragraph 218]**; and responsive to the layer-level is valid and the Internet Protocol options are supported and valid, means for accessing the Internet Protocol destination address from the packet **[Page 11, Paragraph 219]**; means for looking for the Internet Protocol destination address in the routing table **[Page 11, Paragraph 219]**; means for obtaining an address resolution table index stored in

association with the Internet Protocol destination address in the routing table responsive to the Internet Protocol destination address being found in the routing table **[Page 11, 219, next Hop Mac address is the address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph 211, Default Router Table is searched first at IP level using MAC address ad table index]**; and means for storing in the data structure associated with the packet the address resolution table index obtained **[Page 11, 219, next Hop address is stored with the packet]**.

Regarding claim 22, Ambe et al. teaches an apparatus for routing **[Page 3, Paragraph 61]** a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having an Internet Protocol source address, an Internet Protocol destination address and a media access control destination address in a data structure **[Page 13, Table has a packet with IP source address, IP destination address, MAC destination address]**, said apparatus comprising: means for determining whether the media access control destination address for the packet matches an interface of the packet **[Page 11, Paragraph 211]**; means for determining whether the packet is a multicast packet **[Page 11, 217]** and whether multicast routing is invoked responsive to the media access control destination address not matching the interface **[Page 7, 145]** ; responsive to the packet is a packet for multicasting and multicasting is invoked, means for accessing the Internet Protocol source address from the packet **[Page 12, paragraph 229]**; and means for checking a routing table for the Internet Protocol source address **[Page 12, paragraph 229]**; responsive to the routing table contains the Internet Protocol source address, means for checking for layer-level validity of the packet **[Page 12, 230]**;

means for marking a data structure associated with the packet to indicate the layer-level validity was checked **[Page 12, 230]**; means for checking for Internet Protocol options being supported and valid **[Page 11, Paragraph 215]**; and means for marking the data structure associated with the packet to indicate the Internet Protocol options were checked for support and validity **[Page 11, Paragraph 218]**; and responsive to the layer-level is valid and the Internet Protocol options are supported and valid, table; means for accessing the Internet Protocol destination address from the packet **[Page 11, Paragraph 219]**; means for looking for the Internet Protocol destination address in the routing table **[Page 11, Paragraph 219]**; means for obtaining an address resolution table index stored in association with the Internet Protocol destination address in the routing table responsive to the Internet Protocol destination address being found in the routing table **[Page 11, 219, next Hop Mac address is the address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph 211, Default Router Table is searched first at IP level using MAC address ad table index]**; and means for storing in the data structure associated with the packet the address resolution table index obtained **[Page 11, 219, next Hop address is stored with the packet]**.

Regarding claim 23, Ambe et al. teaches an apparatus for bridging **[Page 3, Paragraph 61]** a packet using a routing table that is cross-linked with a state table that is indexed with an address resolution table index **[Page 11, Paragraph 211, L3 table and Default Router table are linked]**, the packet having a media access control destination address in a data structure **[Page 13, Table 1, MAC destination address]**, said apparatus comprising: means for determining whether the media access control destination address for the packet matches an

interface of the packet **[Page 11, Paragraph 211]**; means for determining whether the packet is a multicast packet **[Page 11, Paragraph 217]** and whether multicast routing is invoked responsive to the media access control destination address not matching the interface **[Page 7, Paragraph 145]**; responsive to the packet is not a packet for multicasting or multicasting is not invoked, means for looking for the media access control destination address in an address resolution table **[Page 8, Paragraph 148]**; means for obtaining an address resolution table index stored in association with the media access control destination address in the address resolution table responsive to the media access control destination address being found in the address resolution table **[Page 8, Paragraph 150, search key is address resolution table index]**, wherein the address resolution table index obtained is an index into the state table for locating entry in the state table **[Page 11, Paragraph 211, Default Router Table is searched first at IP level using MAC address ad table index]**; and means for storing in the data structure associated with the packet the address resolution table index obtained **[Page 8, Paragraph 150]**.

Regarding claim 24, Ambe et al. teaches a method of routing **[Page 5, Paragraph 92]** using a state table that is indexed with an address resolution table index **[Page 5, Paragraph 93]**, comprising: obtaining a packet for network address translation, the packet having a media access control header **[Page 5, Paragraph 93]**; determining if a network processing unit is in a pass-through mode responsive for the packet **[Page 5, Paragraph 93]**; and, responsive to the network processing unit not being in the pass-through mode obtaining a media access control source address from the media access control header is stored in an address resolution table **[Page 5, Paragraph 93]**; determining whether an incoming interface is running network address translation **[Page 5, Paragraph 92]**; and routing the packet responsive to the incoming interface

not running the network address translation, the routing including, obtaining an address resolution table index from the packet and accessing routing information stored in the state table using the address resolution index as an index into the state table **[Page 5, Paragraph 93]**.

Regarding claim 26, Ambe et al. teaches determining whether the packet is for a multicast or broadcast frame **[Pages 6-7, Paragraph 126]**; determining whether the incoming interface equals an outgoing interface **[Page 23, Paragraph 389]**; reading control bits for the packet responsive to the media access control source address obtained **[Page 7, Paragraph 138, ARL table is searched which has control bits as described in Paragraphs 128-134 of Page 7]**.

Regarding claim 27, Ambe et al. teaches determining protocol type of the packet **[Page 2, Paragraph 230]**; and determining whether the protocol type is supported on the outgoing interface **[Page 12, Paragraph 234]**.

Regarding claim 28, Ambe et al. teaches determining whether broadcasting or multicasting is invoked for the outgoing interface **[Page 16, Paragraph 280]**.

Regarding claim 29, Ambe et al. teaches an apparatus for routing **[Page 3, Paragraph 61]** using a state table that is indexed with an address resolution table index **[Page 5, Paragraph 93]** comprising: means for obtaining a packet for network address translation, the packet having a media access control header **[Page 5, Paragraph 93]**; means for determining if a network processing unit is not in a pass-through mode responsive for the packet **[Page 5, Paragraph 93]**; and, means for obtaining a media access control source address from the media access control header is stored in an address resolution table **[Page 5, Paragraph 93]**; means for reading control bits for the packet responsive to the media access control source address obtained **[Page**

7, Paragraph 138, ARL table is searched which has control bits as described in Paragraphs 128-134 of Page 7]; means for determining whether an incoming interface is running network address translation **[Page 5, Paragraph 92]**; means for routing the packet responsive to the incoming interface not running the network address translation, the means for routing including means for obtaining an address resolution table index from the packet and accessing routing information stored in the state table using the address resolution index as an index into the state table **[Page 5, Paragraph 93]**. **[Page 5, Paragraph 93]**.

Regarding claim 30, Ambe et al. teaches a computer-readable storage medium containing a program which, when executed by a processor, causes execution of a method for routing **[Page 3, Paragraph 61]** using a state table that is indexed with an address resolution table index **[Page 5, Paragraph 93]** comprising: obtaining a packet for network address translation, the packet having a media access control header **[Page 5, Paragraph 93]**; determining if a network processing unit is not in a pass-through mode responsive for the packet **[Page 5, Paragraph 93]**; obtaining a media access control source address from the media access control header is stored in an address resolution table **[Page 5, Paragraph 93]**; determining whether an incoming interface is running network address translation **[Page 5, Paragraph 92]**; and routing the packet responsive to the incoming interface not running the network address translation, the routing including, obtaining an address resolution table index from the packet and accessing routing information stored in the state table using the address resolution index as an index into the state table **[Page 5, Paragraph 93]**. **[Page 5, Paragraph 93]**.

Regarding claim 31, Ambe et al. teaches a method of routing a packet **[Abstract]** comprising: checking for layer-2 validity **[Page 6, Paragraph 102]**; checking for layer-3 validity

[Page 6, Paragraph 113]; marking a header to indicate that the layer-2 validity check was done **[Page 6, Paragraph 102];** marking the header to indicate that the layer-3 validity check was done **[Page 6, Paragraph 113]**; determining if a frame is for broadcasting or multicasting the packet **[Pages 6-7, Paragraph 126]**; if the frame is for broadcasting or multicasting the packet **[Page 11, Paragraph 217]**, determining if a host operating system is to process the packet; and forwarding the packet to a host Internet Protocol stack responsive to a determination that the host operating system is to process the packet **[Page 11, Paragraph 219]**; obtaining an address resolution table index that is stored in a first state table in association with a media access control destination address that matches a media access control destination address for the packet **[Page 8, Paragraph 150, search key is address resolution table index]**; storing the address resolution table index obtained in a header of the packet **[Page 8, Paragraph 150]**; and locating an entry in a second state table that is cross-linked with the first state table using the address resolution table index obtained as an index into the second state table **[Page 11, Paragraph 219, next Hop address is an index into the second table, Paragraph 211 describes linking of default router table and L3 table]**.

Regarding claim 32, Ambe et al. teaches if a frame is neither a broadcast frame nor a multicast frame, determining whether a MAC destination address for the packet matches an inbound interface address for the packet **[Page 11, Paragraph 211]**.

Regarding claim 33, Ambe et al. teaches if MAC destination address not matching the inbound interface address: determining if bridging is supported by network interface circuitry **[Page 20, Paragraph 347]**; and looking up the media access control destination address in an address resolution table **[Page 8, Paragraph 148]**.

Regarding claim 35, Ambe et al. teaches determining whether a protocol of the packet is routable on an inbound interface of the packet **[Page 11, Paragraph 211]**.

Regarding claim 36 and 39, Ambe et al. teaches determining whether network interface circuitry supports unicast routing **[Page 13, Paragraph 243]**; checking for support for IP options for the packet **[Page 11, Paragraph 212]**; and looking up an Internet Protocol destination address for the packet in a routing table **[Page 11, Paragraph 219]**.

Regarding claim 37, Ambe et al. teaches if frame is for multicasting but not for processing by the host operating system, determining if Internet Protocol routing is active **[Page 11, Paragraph 219]**.

Regarding claim 38, Ambe et al. teaches determining whether an IP source address for the packet is in a routing table **[Page 12, Paragraph 229]**.

Regarding claim 43, Ambe et al. teaches a method for routing a packet **[Abstract]** comprising: checking for layer-2 validity; marking a data structure associated with the packet to indicate the checking of the layer-2 validity **[Page 6, Paragraph 102]**; determining whether a media access control destination address for the packet matches an interface address of the packet **[Page 11, Paragraph 211]**; determining if the packet is for a unicast or a broadcast; determining if the packet is for a multicast frame **[Page 11, Paragraph 217]**; responsive to the packet being for the multicast frame, determining whether Internet Protocol multicast routing is active **[Page 11, Paragraph 219]**; responsive to the packet being for unicasting or broadcasting or not being for multicasting, determining whether bridging is supported in network interface circuitry **[Page 20, Paragraph 347]**; looking for the media access control address for the packet in an address resolution table **[Page 8, Paragraph 148]**; and storing an address resolution table

index responsive to finding the media access control address in the address resolution table **[Page 8, Paragraph 150]**, wherein the stored address resolution table index is associated with the media access control address in the address resolution table and is used for locating an entry in a state table that is indexed with an address resolution table index **[Page 8, Paragraph 150]**.

Regarding claim 44, Ambe et al. teaches the address resolution table index is stored in a data structure associated with the packet **[Page 11, 219, next Hop address is stored with the packet]**.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 4, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe et al. (US-PGPUB 2002/0009083) in view of Kato et al. (USPN 6,649,999).

Regarding claim 4, Ambe et al. teaches a method as discussed in rejection of claim 1.

However, Ambe et al. does not teach the routable protocol is an Internet Protocol, and wherein the Internet Protocol is version four.

Kato et al. teaches the routable protocol is an Internet Protocol version four **[Col. 8, lines 53-56]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Internet Protocol version four for routing purposes since it allows for expanding the address space and easing the routing load.

Regarding claim 5, Ambe et al. teaches a method as discussed in rejection of claim 1.

However, Ambe et al. does not teach the routable protocol is an Internet Protocol, and wherein the Internet Protocol is version six.

Kato et al. teaches the routable protocol is an Internet Protocol version six **[Col. 8, lines 53-56]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Internet Protocol version six for routing purposes since it allows for expanding the address space and easing the routing load.

5. Claims 7, 8, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over et al. (US-PGPUB 2002/0009083) in view of Doherty et al. (USPN 6,101,170).

Regarding claims 7 and 12, Ambe et al. teaches a method as discussed in rejection of claim 1 and claim 11.

However, Ambe et al. does not teach the address resolution table index obtained is stored in a plurality of canonical frame headers.

Doherty et al. teaches the address resolution table index obtained is stored in a plurality of canonical frame headers **[Col. 6, Table 1, Destination Address is the Address resolution index as discussed in rejection of claim 1]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to store address resolution index in a canonical frame header to form a unique connection identifier **[Col. 1, lines 31-36]**.

Regarding claim 8, Doherty et al. further teaches address resolution table index is stored in a canonical frame header **[Table 1, Destination Address is the Address resolution index as discussed in rejection of claim 1]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to store address resolution index in a canonical frame header to form a unique connection identifier **[Col. 1, lines 31-36]**.

6. Claims 9, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe et al. (US-PGPUB 2002/0009083) in view of Tasman et al. (USPN 7,116,640).

Regarding claims 9 and 13, Ambe et al. teaches a method as discussed in rejection of claim 1 and claim 11.

However, Ambe et al. does not teach routing table is more compact than a general routing table.

Tasman et al. teaches routing table is more compact than a general routing table **[Col. 14, lines 31-33]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make compact routing table so that they can be transferred, moved, or copied quickly **[Col. 14, lines 31-33]**.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe et al. (US-PGPUB 2002/0009083) in view of Leung (USPN 6,781,955).

Regarding claim 16, Ambe et al. teaches a method as discussed in rejection of claim 15.

However, Ambe et al. does not teach the data structure is apportioned to having a canonical frame header, wherein the address resolution table index is stored in the canonical frame header.

Leung teaches the data structure is apportioned to having a canonical frame header, wherein the address resolution table index is stored in the canonical frame header **[Col. 6, lines 9-16, VID is the address resolution table index]**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a canonical frame header and store the address resolution table index into the canonical frame header so that the index could be used to identify to which VLAN (Virtual Local Area Network) the frame belongs **[Col. 6, lines 9-16]**.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe et al. (US-PGPUB 2002/0009083) in view of Iyer et al. (USPN 7,136,926).

Regarding claim 25, Ambe et al. teaches a method as discussed in rejection of claim 24.

However, Ambe et al. does not teach pass-through mode is a firewall only mode.

Iyer et al. teaches pass-through mode is a firewall only mode **[Col. 3, lines 51-56]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a firewall mode to improve performance of packet filtering associated with Firewall mode **[Col. 5, lines 37-40]**.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrahas Patel whose telephone number is 571-270-1211. The examiner can normally be reached on Monday through Thursday 7:30 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CBP

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